

What Is Claimed Is:

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1. A method for killing neoplastic cells, said method comprising:
 - (a) infecting said neoplastic cells with a vector for gene delivery, said vector comprising an FPGS gene;
 - (b) treating said neoplastic cells with a chemotherapeutic agent that is activated by the product of said FPGS gene; and
 - (c) killing said neoplastic cells.

2. The method of claim 1, wherein said FPGS gene is a mammalian gene.

3. The method of claim 2, wherein said mammalian gene is a human gene.

4. The method of claim 1, wherein said chemotherapeutic agent is an antifolate drug.

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5. The method of claim 4, wherein said antifolate drug is methotrexate, edatrexate, aminopterin, or a thymidylate synthetase inhibitor.

6. The method of claim 1, wherein said FPGS gene is human FPGS, and said chemotherapeutic agent is methotrexate.

7. The method of claim 1, wherein said vector for gene delivery is a viral vector.

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8. The method of claim 7, wherein said viral vector is derived from retrovirus, adenovirus, adeno-associated virus, herpes virus, poliovirus, papillomavirus, or lentivirus.

5 9. The method of claim 8, wherein said viral vector is derived from retrovirus, adenovirus, or herpes virus.

10. The method of claim 1, wherein said vector for gene delivery is non-viral.

10 sub a³ 11. The method of claim 10, wherein said non-viral vector for gene delivery is a prokaryotic vector, cationic liposome, a fusogenic liposome, a DNA-adenovirus conjugate, a DNA-protein complex, a non-viral T7 autogene vector, the direct injection of nucleic acid, particle-mediated gene transfer, receptor-mediated gene transfer, starburst polyamidoamine dendrimers, a cationic peptide, mammalian artificial chromosome, endothelial cell, or macrophage.

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